Time: 3 Hours **Marks: 80**

Note:-

1. **Question 1 is compulsory**
2. **Solve any 3 out of the remaining 5.**
3. **Assume suitable data wherever necessary**

Q. 1 Solve any 4 out of 5 **(20 Marks)**

a. Explain the following instructions of 8051: 5
a) MOV A, @R0 b) SETB Bit c) JB/JNB d) CPL e) SJMP/LJMP
b. Explain the various addressing modes of 8051. 5
c. Compare microprocessors and microcontrollers 5
d. Draw the TCON and TMOD register structure 5
e. Show the interfacing diagram for ADC to 8051. 5

Q. 2 a. Explain the memory organization in 8051 microcontroller. 10
b. Describe various registers and programmer model of 8051 microcontroller. 10

Q.3 a. Describe the interrupt structure in 8051 microcontroller. 10
b. Write an assembly language program to generate a square wave of 1 Khz on P3.2 for 8051 operating at 12Mhz. 10

Q.4 a. Write an assembly language program to display "GOOD" on LCD using 8051. 10
b. Draw and Explain port 0 operation in 8051. 10

Q.5 a Explain the interfacing of DAC to 8051 microcontroller. 10
b. Write a program to serially transfer "YES" at 9600 baud in 8051. 8-bit data,1 stop bit . 10

Q.6 Write short notes on **any 4** 20
a. 8051 Architecture
b. RISC and CISC concepts
c. Low Power modes of 8051
d. Modifiers in C
e. Interfacing temperature sensor to 8051

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